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A PRIMER ON EMERGING MARKET CRISES

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Over the past 20 years there has been an outpouring of emerging market crises and a vast accumulation of commentary -- descriptive, theoretical and applied-- highlighting the origins and mechanics of each crisis and of crises in general. And there is plenty of analysis on how to deal with crises both in terms of prevention and of cures. Is it possible now to distill from all this a simple set of propositions that summarize the experience and capture the chief lessons?

This paper attempts to set out a few propositions that summarize what is known and accepted. The interest in doing so is to promote a set of presumptions about what is unsound practice with a presumption that it cannot fail to engender, in time, a crisis. Moreover, crises are not just financial experiences but rather involve large and lasting social costs and important redistribution of income and wealth. That makes it especially important to secure agreement on what constitutes bad practice and identify areas of continuing controversy.

I. Slow vs. Fast, Bad Regimes vs. Big Collapses

A useful distinction can be drawn between old-style or slow motion crises focussing on the financing of the current account in a financially repressed economy and the new-style balance sheet crises of a financially opened economy. The distinction is not only useful in highlighting what is new but also to have policy makers understand the great speed of new-style crises and their devastating cost compared to earlier experiences.

Old-style crises involve a cycle of overspending and real appreciation that worsens increasingly the current account; while resources are ample and before real appreciation bites into growth the process is politically popular. In time resources become more limited and unpleasant options such as demand restraint and trade restrictions have to be mounted but they cannot last. Ultimately devaluation comes and the process starts all over again. The "stabilization" may last if there is little accommodation; but if money is passive and the increased external room is used for quick expansion the process is more nearly a *regime* of an inflation-devaluation spiral.

Exchange rate adjustments in an old-style setting have very little of a crisis aspect. Richard Cooper has noted that it normally or invariably involves the fall of the finance minister but not much more. The central issue, as Diaz Alejandro (1966) noted, is the fall of the real wage and the politics around it.[1] Because finance is repressed, the build up of sensitive balance sheets is ruled out.

Example: One of the few old-style situations till in play is Egypt; occasionally a widely anticipated moderate devaluation happen to relieve trickling reserve losses from current account imbalances and suitcase capital flight.

An important part of the story, obscuring its simplicity, is the occasional arrival of external resources (new access to the world capital market, the World Bank, etc) which gives room for better growth without the early arrival of the external constraint. But these resources more often than not are debt and hence have in itself an adverse effect on the current account. Accordingly, unless there is significant productivity growth, trend real wages will have to decline in order to generate debt service. Alternatively, new resources or debt reduction must make room for keeping up real wages.

A new-style crisis involves doubt about credit worthiness of the *balance sheet* of a significant part of the economy --private or public-- and the exchange rate. It may originate with questions about either the balance sheet or the exchange rate, but when there is a question about one, the implied capital flight makes it immediately a question about both. In no time capital flight wipes out reserves and precipitates a currency collapse. That process is only brought to an end by a resolution of the credit issues and the commitment of monetary policy. External intervention has high leverage in resolving credit and credibility issues.

The capital account plays a key role in the run-up to the crisis and in its unfolding. There is too much credit on the way in and far too little once the crisis hits. The bankers adage is "its not speed that kills, it's the sudden stop". Frank Taussig (1928) captured the point when he wrote :

"*The loans from creditor countries.. begin with a moderate amount, then increase and proceed crescendo. They are likely to be made in exceptionally large amounts toward the culminating stage of a period of activity and speculative upswing, and during that stage become larger from month to month so long as the upswing continues. With the advent of crises, they are at once drawn down sharply, even case entirely*."

The central part of the new-style crisis is the focus on balance sheets and capital flight. Balance sheet issues are, of course, fundamentally linked to mismatches; even if there were solvency they still create vulnerability related to liquidity problems. Exchange rate

[1] Diaz Alejandro (1984) , writing about the debt crisis of the early 1980s, keenly appreciated that finance had now become the key actor and aptly signaled this with the catchy title "We are not in Kansas anymore..". He would have needed yet another title to characterize the extraordinary increase in size and speed of the finance factor in recent crises.

depreciation, in a mismatch situation, works in an unstable fashion to increase the prospect of insolvency and hence the urgency of capital flight.

Because new-style crises involve the national balance sheet they involve a far more dramatic impact on economic activity than mere current account disturbances; this far larger impact arises both in terms of magnitude of the financial shock as well as *disorganization effects* stemming from illiquidity or bankruptcy. [2]

II. Vulnerabilities

There are three central sources of vulnerability: a substantially misaligned exchange rate, or balance sheet problems. Trouble inb the balance sheet can come in one of twoi ways: existing big holes in the form of nonperforming loans or else exposure. Nonperforming loans or vulnerable loans, not quite gone yet., speak for themselves except to note immediately that they limit the room for higher interest rates and hnce are a major problem for an interest rate defense. The other problem is exposure in the form of mismatches. In a national balance sheet there can be two kind of mismatches: *maturity* mismatches leading to liquidity issues and *currency* mismatches. In a situation where the willingness to hold assets on current terms is impaired, these misalignments or mismatches become explosive. The willingness to hold assets can be impaired either because there s a question about the exchange rate or about the willingness and ability of debtors to meet their liabilities.

The exchange rate can be the starting point of a crisis when it is patently out of line. This is typically the case in exchange rate-based disinflation programs which succeed in bringing down inflation but do so at the cost of a significant real appreciation. The resulting widening of the current account deficit and the disappearance of growth, from appreciation and as a result of increased interest rates required to attract continued financing, make it obvious that the program cannot last because it is not self correcting. At some point, see below for detail, a speculative attack occurs which cannot be met by yet high rates or reserve depletion. At that point currency depreciation interacts with balance sheet issues. The worse the balance sheets, the bigger the collapse.

The initial large real appreciation of an exchange rate is often justified by the argument that it reflects restructuring-induced dramatic rates of productivity growth generating Balassa-Samuelson kind inflation. The argument is invariably suspect because it should not affect manufacturing price-based competitiveness measures and it is less likely to be the case in an environment where unemployment is high and rising and the current account is deteriorating.

What are sustainable rates of real appreciation or of current account deficits and what invites a crisis? Because of such issues as lasting improvements in capital market access,

[2] *Disorganization effects* are developed in Blanchard and Kremer (1997) to help understand the output collapse in transition economies but have not been applied in the setting of emerging market crises where they are as useful a guide to grasping dramatic output adjustments.

persistent terms of trade improvements and productivity growth, emerging economies can experience trend real appreciation; they certainly can expect to finance on an ongoing basis some deficit/GDP ratio. It is safe to say, however, that a rapid -- say over 2 or 3 years-- real appreciation amounting to 25 percent and more and an increase in the current account deficit to exceed 4 percent of GDP, without prospect of correction, take a country into the red zone.

Example: Mexico with its recurrent end of sexennio currency collapses is an example where the exchange rate and the current account are in the foreground and where concern about the possibility of a devaluation (or the fact of a small devaluation) triggers massive capital flight. Because devaluation is postponed by shortening and dollarizing debt (the Tesobonos issue, see below) the balance sheet issues triggered by the currency depreciation are huge..

Consider next a balance sheet with substantial nonperforming loans. If interest rates are lowered, the currency comes under attack. If interest rates are raised, the loan portfolio goes even further under water. This is a common situation leading up to a crisis.

Example: Thailand and Malaysia in 1997 had substantial nonperforming loans; in Thailand they were in real estate and consumer finance, in Malaysia they included stock market loans that had financed a market boom. Protracted unwillingness to raise mandated lending rates brought about a "carry trade", the currency under pressure, created an offshore market and ultimately led to crisis.

A large budget deficit or a large short-term public debt are factors of vulnerability. A change in the growth prospects undermines the sustainability of debt as does an increase in world interest rates and thus undermines the willingness to hold and add to portfolios of lenders. The same is true for a perception that the willingness to service the debt is impaired. The result is a flight from public debt and that flight, invariably, is into foreign assets. The resulting funding crisis translates into increased interest rates, which further worsen the fiscal situation and thus act in a destabilizing fashion.

Example: Brazil's crisis was centered on a large short-term debt part of which was dollar-linked; depreciation prospects put debt service into the express lane and actual depreciation completed the picture.

Argentina in late 2000 is a case in point. A deteriorated growth outlook put in question the financing of budget deficits and the rollover of the public debt by external creditors. Interest rates shot up and the prospect of a massive capital flight was in the air. A massive IMF postponed the fiscal crisis until further notice.

If the exchange rate is fixed, reserves are being depleted and that process increasingly adds currency risk to the equation. If the rate is flexible, depreciation ensues and increasing depreciation is projected. That, in turn may spread risks to foreign exchange-denominated parts of the balance sheet and aggravate capital flight.

Banking problems are a frequently part and possibly the initiating factor of a currency crisis. When creditors of short-term inter-bank lines, or depositors, withdraw from suspect banks, the resulting flows tend to go offshore and hence translate into reserve losses and or depreciation. The situation is more likely to become a banking and foreign exchange crisis, the worse the nonperforming loan situation, the larger the maturity mismatching in the balance sheet and the more significant the mismatching of denominations on the asset and liability side.

It is invariably important to look behind the balance sheet of the banking system to look at the underlying exposure generated by the banks' loan customers. While the banks' balance sheets may look proper, the loan customers may have the mismatching on their books and hence shift it to the banking system if and when they run into trouble.

It is also important to recognize that a banking system's situation can change in a major way in a very short time period. This easily happens in a situation where a concentration of liabilities (say real estate loans) becomes bad or a spell of high interest rates causes a general deterioration of a loan portfolio that had been just a bit above marginal. If the banking system's funding is short term, the makings of a crisis come on very fast.

Example: The Turkish crisis of December 2000 is a great example. In a situation of a large number of bad banks (not the major part of the banking system though), a withdrawal of credit lines triggered a banking crisis; the central bank financed the run on the banks by pumping in credit only to repurchase the liquidity in selling foreign exchange. Reserve depletion within days threatened the maintenance of an IMF-supported exchange-rate based stabilization program.

The corporate sector, just as the banking system, has balance sheets that are vulnerable to mismatch issues both of maturity and denomination. The larger the corporate sector's short-term debt in the national balance sheet, the more vulnerable the country to a funding crisis which then becomes a currency crisis. Once again, when credit to a particular sector is withdrawn, in emerging markets, that means a capital outflow and not a substitution into other assets. For that reason balance sheet problems become currency crisis issues.
Example: Indonesia and Korea are examples where formidably bad balance sheets -- huge debt equity ratios and large foreign exchange exposure-- were a major part of the crisis situation. Typically it takes weeks to even figure out just how large the external exposure is. Creditors will be reluctant to take haircuts, debtors are under no pressure to yield. The protracted debt problem overshadows post-crisis credit normalization.

Whenever capital flight emerges, the question of the exchange rate regime is immediate. Under fixed rates that means how much reserves the central bank has and is willing to commit; under managed or flexible rates it mans how far and fast the rate will depreciate. Either way the question is how urgent is it to bring money out; once that question emerges, very urgent is the answer. Reserves are almost never enough to withstand a balance sheet attack and often they are less than reported.

Vulnerability can, at least conceptually, be expressed in terms of a value at risk exercise; what are the relevant shocks, what are the exposure areas, how large a deterioration of the balance sheet would result. Mismatches are the key triggers of extreme vulnerability. And the worse the risk in part of the balance sheet, the more likely that it will spread to all of it if only because, in case of doubt, creditors want recovery and asset holders hold off lending.

Example: The Asian economies which experienced crises had bad corporate financial structures (high debt, high foreign exchange debt) relative to equity and a high ratio of short-term external liabilities to reserves. The combination made for fireworks.

Table 1 Critical Indicators: 1996 (%)

	Corporate Debt/Equity	Short-term External Debt/Reserves
Indonesia	310	177
Korea	518	193
Malaysia	150	41
Philippines	160	80
Thailand	250	100

Source: World Bank

III. Timing

There is no hard rule about the timing of crises. It is surprising how long basically unsustainable situations can be given extra lives, notably if an election is in sight. With an election on the horizon, creditors are willing to believe that much or anything will be done to hold off a crisis or a corrective devaluation. Governments will do anything, including high interest rates or preferably a shortening of maturities and re-denomination into foreign exchange of claims. As a result, crises happen after elections, not before. This is akin to the myopic political business cycle but no less real. It is clear that the more the crisis is postponed, the worse the balance sheet and the larger the fallout once it does happen.

Example: Mexico always postpones crises until after the election, so did Brazil and Korea. So did Russia. The post-election discovery of a Taiwan banking problem, and crisis, is another instance.

(2) Bad balance sheets -- as opposed to significant overvaluation, escalating current account deficits or vanishing growth-- in principle can last for almost ever provided net inflows cover up the hole and transparency is absent ("clear water, no fish" as the

Chinese saying goes). As a result, the proverbial straw that broke the camel's back story can easily be the trigger. A relatively minor event might break a precarious refinancing scheme, or a suspicion arising anywhere else in the world might cause creditors to kick the tires somewhere else. Importantly, changes in the relative attractiveness of domestic and foreign assets or a change in the growth scenario can bring suddenly the test of the balance sheet and with it the move to crisis. If the balance sheet is bad enough, as a rule, quite small events are sufficient to undermine the funding scenario and precipitate the crisis.

Example: Turkey had forever been on the short list for a crisis but somehow got by. The failure of a Rumanian subsidiary of a bad Turkish bank, in an environment of political agitation about a sleazy banking system, got the stone rolling and within days reached the prospect of immediate currency collapse.

Contamination easily fits the pattern of balance sheets bad enough to be waiting for an accident. When that is the case, in time the right circumstances will materialize. It takes longer than you think but then it happens faster than you would have thought. A shift in the external environment – G3 exchange rates, Fed interest rates, a slump in new commodity exports all can work as triggers.

Example: The spread of crisis in Asia fits this pattern.

IV. *Good Balance Sheets, No Crisis*

Do countries with good balance sheets and a currency that is not vastly misaligned face crisis risks? Of course, there is the trivial answer that for any exchange rate or any balance sheet there is a shock large enough to make it unviable. But the striking fact of the past 20 years of crises is surely this: well-managed emerging market economies have suffered slowdowns in growth, high interest rates and currency depreciation. But they have not suffered crises. Moreover, the better the balance sheets, the better the ability to absorb shocks to capital flows and trade without outsized adjustments in exchange rates or interest rats.

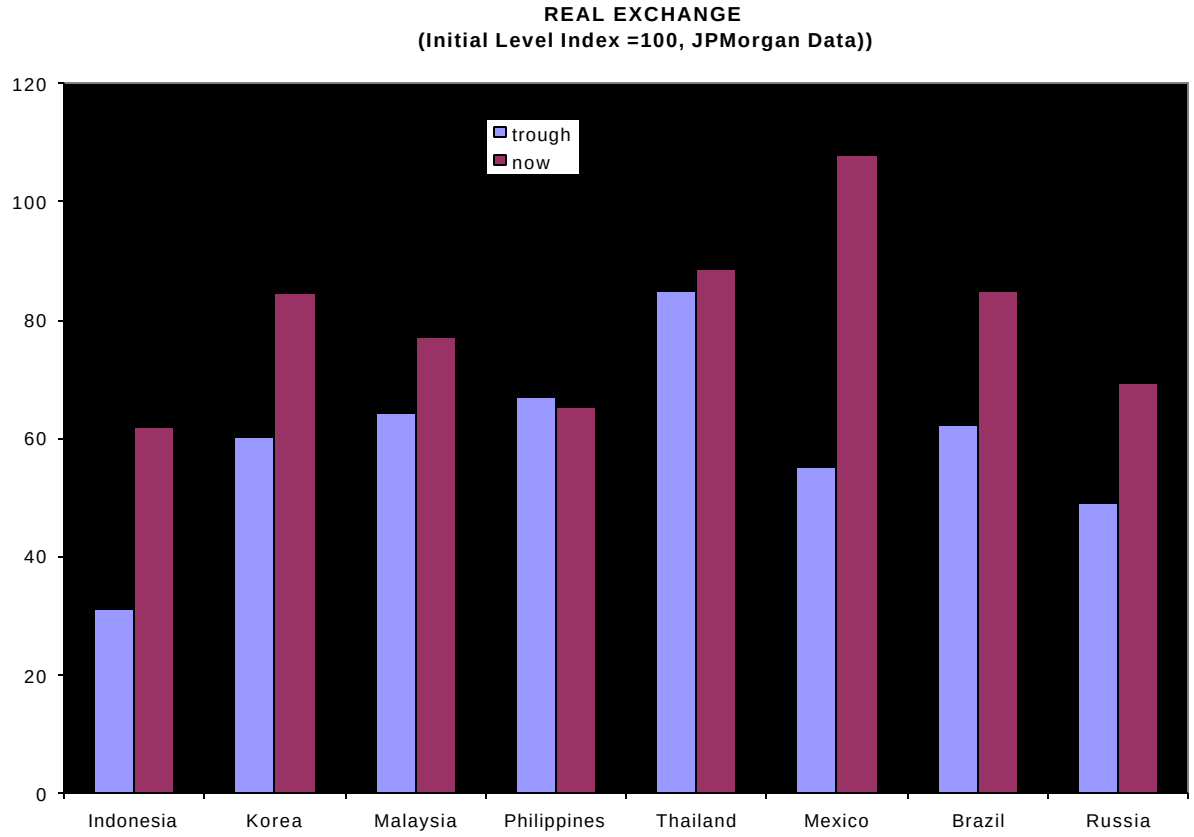
The proposition "good balance sheets, no crisis" risks being circular; but pending a good counter example, let it strand.

Example: The good balance sheets of banks in Singapore, Hong Kong and Argentina are a large part of why these countries while surely affected were not pushed under by the crises of Mexico or Russia-Brazil.

IV. *Why are Collapses so Large?*

Currency collapses are large for two reasons: value at risk is extraordinarily large because of the interaction of mismatch factors and because of the difficulty of governments, once a meltdown is underway, to establish their willingness and ability to engage in an

uncompromising stabilization effort. In this environment, the IMF's role is to restore credibility and hence credit.[3]



The interaction of mismatch factors produces an instability in the response of asset holders: the more the exchange rate goes, the more bankrupt the balance sheet and hence the more reason to deny credit and get out. The higher the maturity mismatch, the more liquid the creditors and the more easily the debtor is moved to the gray zone between illiquidity and insolvency. The interaction of depreciation and illiquidity causes markets to cease functioning and hence record interest rates and initially a vast overshooting of exchange rates are the rule.

The crisis itself weakens the government politically and makes it doubtful whether it is willing to stick with a policy that dries up credit and hence starves off capital flight; the absence of effective property rights and the total absence of transparency renders the possibility of bottom fishing very hazardous. Hence there are no capital inflows, no stabilizing speculation and just a one-way downward pressure on asset prices, the currency and the balance sheets.

[3] For the Asian economies the initial level is January 99; for Mexico January 94, for Brazil and Russia Jan 98. The most recent data are for December 2000.

Example: Indonesia, with a political collapse and an ongoing struggle about who will pay the debts and who will gain offers a clear case of an unresolved crisis.

Disorganization in the *Blanchard-Kremer* sense becomes a dramatic issue when creditworthiness collapses, bankruptcy spreads and from that side attacks the real economy. The real economy is a complex layer of relationship in two ways: first there are input-output relationship that can be disrupted at any point in the chain because a critical supply or demand link disappears and hence impairs or brings down the whole chain. Second, there is often a credit relationship, rather than cash & carry, and this is sensitive to creditworthiness suspicions and can become the disruptive factor. Disorganization is an important part of the output collapse.

The IMF's role in reversing the dramatic immediate events is twofold. First it offers a commitment device for governments to underwrite a stabilization strategy that is known to work. Second, it offers temporary credits and debt reorganization, including lock-up of short term credits commercial bank creditors, and thus helps stem the outflows.

High interest rates may hurt growth and the balance sheets but they definitely stem the depreciation of the currency. Ultimately that is the single most important beachhead of the stabilization program. As long as the currency melts, there is no prospect of stabilization. (We discuss below an alternative of controls).

Example: In the collapse phase currencies depreciate formidably relative to any current account-based view of what is necessary for adjustment. They are driven by the capital account. When a credible program is put in place, there is a rapid normalization as in Korea or Brazil.

The adoption of an IMF strategy, and demonstrated adherence soon shut off the hemorrhage and turn around into a path of currency recovery and a decline in interest rates. The combination of post-collapse over-depreciated exchange rates and a credible credit program provides for appreciating exchange and declining interest rates. A virtuous circle is entered. Wavering commitment, by contrast, remains reflected in volatile currency and high interest rates.

V. Costs

Currency crises are formidably expensive; even more so is a history of recurrent crises. The costs arise in three ways: a substantial increase in public debt associated with the crisis, a loss of output and disruption, and the possibility of socially controversial redistribution of income and wealth.

In a currency crisis, because the government will bail out banks and often-even companies, public debt increases substantially and with that future tax liabilities. The deterioration in public finance also arises from a period of high interest rates in the run-

up to the crisis and in the stabilization phase. It will also arise from the fall in output and hence tax revenues in the crisis period. Moreover, the increases in debt may itself bear the seeds of future crisis if it occurs in a situation where the government dos not have the ability to meet the higher debt service burden by taxation or reduction in spending.

The numbers can be staggeringly large. It is easy to have the government burden 20 or even 30 percent and more of GDP from a bank bail out. In addition, there is easily a 10 or 15 percent increase in debt from high interest rates applied to a large debt and from recession-induced tax losses.

There is also always a large loss of reserves, which are sacrificed during the defense part of the crisis. To some extent these may be captured by the private sector and hence merely amount to a transfer but often they are the counterpart of a bet the government makes with the rest of the world and loses.

To the extent that a crisis experience deteriorates a country's credit rating, there is also a lasting cost in terms of a higher international cost of capital.

A currency crisis redistributes wealth and income. It is said that more money was made in the few years of collapse of the Holy Roman Empire than in the long years of its existence. The same is true of crises that enrich those who can be in time in foreign exchange or can get the government to assume their debt while keeping the assets That is routine. The striking regularity, of course, is the dramatic fall in real wages and employment as well as the bankruptcy of small debtors.

Periods of recurrent currency crises translate into poor growth performance, short horizons, slow increases in the standard of living, a deteriorating social and economic infrastructure. Major asset sales along the way, or increases in external debt, and spurts of reform can obscure the degradation of the productive economy at any one time. But ultimately medium term growth rates, far from reflecting catch-up, reflect the costs of persistently poor finance.

Table 2 Latin American Growth Per Capita

1980-90	1990-99
-0.3	1.7

VI. The Alternative Medicine Controversy

There are two areas of controversy. The first involves capital controls and the second surrounds the appropriateness of IMF programs. On both issues the controversy is alive and conducted with great vehemence.
The appropriateness of IMF programs is quite obviously questioned because it seems, at least on the surface, to make a bad situation worse. Raising interest rates at a time where balance sheets are already under water makes a bad debt situation worse. Raising interest rates and tightening fiscal policy at a time where the economy is already in steep decline seems to be outright counter productive.

What are the alternatives? The capital flight will certainly continue as long as the central bank pumps in credit at unchanged interest rates. The reason is obviously that the immediate gains from borrowing in a depreciating currency far outweigh the cost of borrowing. Hence borrowing and capital flight remain active, depreciation deepens, balance sheet problems widen -- there is no obvious end to the process.

There are, of course, two ways of trying to reconcile unchanging interest rates-- rather than extraordinary short run levels of 100 or 1000 percent p.a. -- with an end to capital outflows. One possibility is credit allocation controls and the other is capital control and best both combined. There are obvious questions of effectiveness of controls but even if hat is accepted, there is also the issue of efficiency. If controls were temporary that might not be an issue, if they are lasting then suspending the capital market is much more of an issue. For the system at large the presumption that controls are the response to outflows will reduce the perception of liquidity and hence translate into a higher cost of capital and more trigger-happy investors.

Surely there is agreement that the better strategy is to reduce the risks of a crisis situation, including by predetermined limits on liquidity and profitability, but that leaves open the question of what to do in the midst of a crisis: IMF or controls. The debate continues.

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